culture into an oocyte that is enucleated to remove its endogenous nucleus to produce a nuclear transfer ("NT") unit;

(ii) culturing said nuclear transfer unit to produce an embryo that can be implanted in a female surrogate;

(iii) implanting said embryo in a non-human female surrogate to produce a cloned embryo or offspring; and

(iv) obtaining a cloned embryo or offspring comprising somatic cells having an increased life-span relative to the donor cell or nucleus.

57. The method of Claim 56, which comprises isolating a cell, organ or tissue from said non-human cloned embryo or offspring containing somatic cells having increased life-span relative to the donor cell or nucleus.

58. The method of Claim 56, wherein said donor somatic cell or nucleus is genetically modified.

59. The method of Claim 58, wherein said genetically modified cell comprises at least one gene deletion, addition or substitution modification.

60. The method of Claim 58, wherein said genetically modified cell is produced

by homologous recombination.

61. The method of Claim 56, wherein a somatic cell is obtained from said cloned fetus or offspring and is itself used as a donor cell or nucleus in a subsequent nuclear transfer procedure.

62. The method of Claim 56, wherein a somatic cell is obtained from said cloned fetus or offspring and is expanded in tissue culture, and a cell derived from said cell or a nucleus therefrom is used as a donor cell or nucleus in a subsequent nuclear transfer procedure.

63. The method of Claim 62, wherein said somatic cell is genetically modified.

64. The method of Claim 63, wherein said genetically modified cell comprises at least one addition, substitution, or deletion

65. The method of Claim 56, wherein said somatic cell has been cultured to about senescence prior to being used as a donor cell or nucleus in said nuclear transfer

66. A method for rejuvenating (increasing the life-span) of a desired somatic cell which method comprises:

(i) introducing a somatic cell having a limited life-span or nucleus therefrom into an oocyte which is enucleated to remove its endogenous nucleus to produce a nuclear transfer (NT) unit;

(ii) culturing said nuclear transfer unit to produce a blastocyst having a discernible inner cell mass; and

(iii) culturing cells from said blastocyst, including cells from the inner cell mass, on a feeder layer to produce cultured inner cell mass cells or cell lines which are capable of differentiating into non-embryonic (somatic) cell types when cultured under appropriate conditions; and

wherein said somatic cell possesses an increased life-span relative to said donor cell used for nuclear transfer.

67. The method of Claim 66, wherein said donor cell is cultured until about senescence prior to its use as a donor cell or nucleus.

68. A cloned non-human offspring or fetus that is produced by a nuclear

life-span, and which cloned non-human offspring or fetus comprises somatic cells of the

same type as the donor cell having an increased life-span relative to the donor cell or nucleus used for nuclear transfer.

69. The cloned non-human fetus or offspring of Claim 68, which is an ungulate.

70. The cloned non-human fetus or offspring of Claim 68, which is a bovine.

71. The method of Claim 66, wherein said somatic cell or nucleus used as the donor cell or nucleus is a human somatic cell or nucleus.

72. The method of Claim 66, wherein said somatic cell is selected from the group consisting of a neural cell, fibroblast, hematopoietic cell, cardiac cell, liver cell, cartilage cell, epithelial cell, urinary tract cell, skin cell, pancreatic cell, stomach cell, intestinal cell, reproduction organ cell, bladder cell, intestinal cell, urethral cell, and lung cell.

73. The method of Claim 72, wherein said somatic cell is genetically modified.

a mammalian cell that is genetically modified which has been expanded in tissue culture.